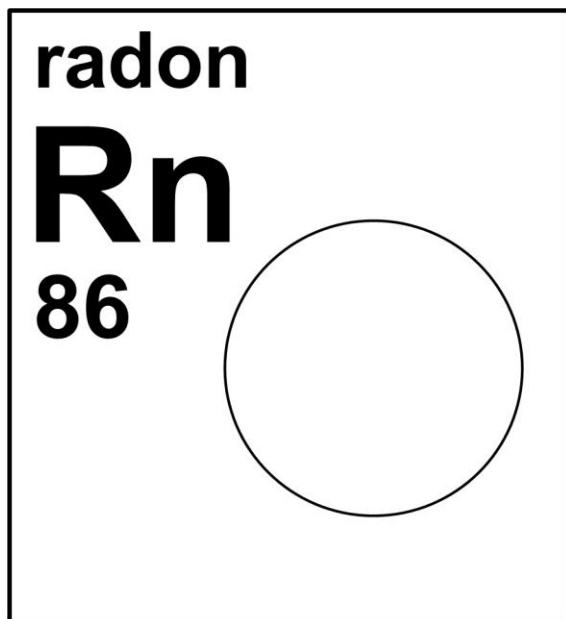





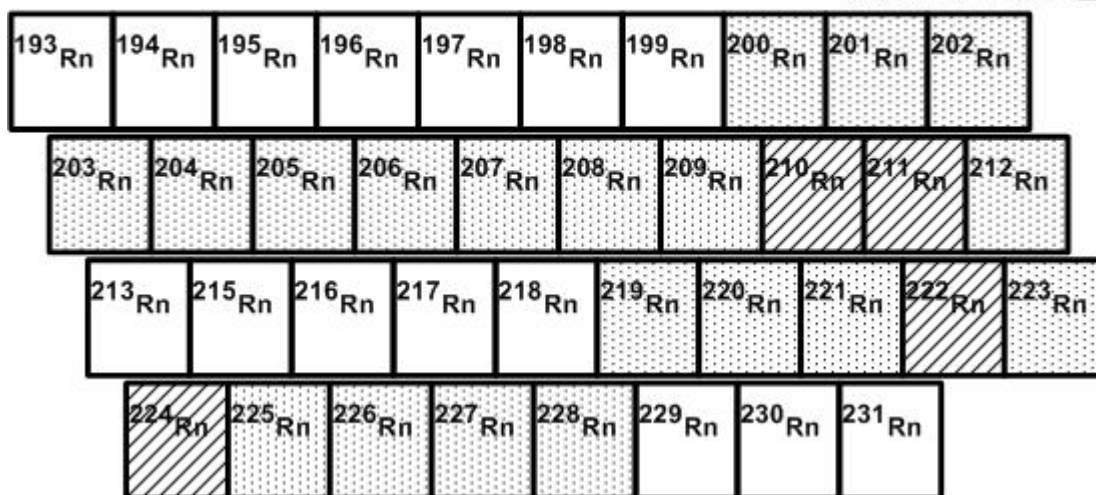
radon



Stable isotope	Atomic mass	Mole fraction
(none)		

Half-life of radioactive isotope

Less than 1 second	
Between 1 second and 1 hour	
Greater than 1 hour	



Important applications of stable and/or radioactive isotopes

Isotopes in the environment

- 1) ^{222}Rn can be used as a tool to date groundwater when used in combination with other isotopes. Sultankhodzev et al. (1971) related ^{222}Rn to uranium decay and then used He/Rn and Xe/Rn ratios to date groundwater.
- 2) Both ^{220}Rn and ^{222}Rn are used to study underground environmental as well as atmospheric gaseous transport processes.
- 3) An increase in ^{222}Rn emissions has been suggested as a way to predict earthquakes since the increased surface area due to rocks cracking in the second stage of earthquake progression allows for more radon exposure to the environment.

- 4) The interaction of radon with streams and rivers allows it to be commonly used as a tracer in groundwater studies. ^{222}Rn has a short residence time in streams and river channels, which therefore leads to radon loss. As a result, if an area of a stream or river has a high concentration of radon, it will mean that there are local groundwater inputs. Kraemer and Genereux (1997) provide a detailed discussion of ^{222}Rn mixing models and the use of ^{222}Rn to determine areas of ground water discharge to streams.



Figure 1: Air-water equilibrator, which strips radon out of water and into the gas phase so it can be used as a groundwater tracer.